

PF0000055033/Kes

- 16 -

What is claimed is:

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1. A process for preparing high-functionality highly branched polyureas which comprises reacting one or more carbonates with one or more amines having at least two primary and/or secondary amino groups, at least one amine having at least three primary and/or secondary amino groups.
2. A process according to claim 1, wherein amines having two primary and/or secondary amino groups are reacted, these amines being selected from the group consisting of ethylenediamine, N-alkylethylenediamine, propylenediamine, 2,2-dimethyl-1,3-propanediamine, N-alkylpropylenediamine, butylenediamine, N-alkylbutylenediamine, pentanediamine, hexamethylenediamine, N-alkylhexamethylenediamine, heptanediamine, octanediamine, nonanediamine, decanediamine, dodecanediamine, hexadecanediamine, tolylenediamine, xylylenediamine, diaminodiphenylmethane, diaminodicyclohexylmethane, phenylenediamine, cyclohexylenediamine, bis(aminomethyl)cyclohexane, diaminodiphenyl sulfone, isophoronediamine, 2-butyl-2-ethyl-1,5-pentamethylenediamine, 2,2,4- or 2,4,4-trimethyl-1,6-hexamethylenediamine, 2-aminopropylcyclohexylamine, 3(4)-aminomethyl-1-methylcyclohexylamine, 1,4-diamino-4-methylpentane, amine-terminated polyoxyalkylene polyols (known as Jeffamines) or amine-terminated polytetramethylene glycols.
3. A process according to claim 1 or 2, wherein the at least one amine having at least three primary and/or secondary amino groups is selected from the group consisting of bis(aminoethyl)amine, bis(aminopropyl)amine, bis(aminobutyl)amine, tris(aminoethyl)amine, tris(aminopropyl)amine, tris(aminohexyl)amine, trisaminohexane, 4-aminomethyl-1,8-octamethylenediamine, trisaminononane, N-(2-aminoethyl)propanediamine, N,N'-bis(3-aminopropyl)ethylenediamine, N,N'-bis(3-aminopropyl)butanediamine, N,N,N',N'-tetra(3-aminopropyl)ethylenediamine, N,N,N',N'-tetra(3-aminopropyl)butanediamine, melamine, oligomeric diaminodiphenylmethanes, amine-terminated polyoxyalkylene polyols with a functionality of three or more, polyethyleneimines with a functionality of three or more or polypropyleneimines with a functionality of three or more.
4. A process according to any one of claims 1 to 3, wherein the carbonate is selected from the group consisting of ethylene carbonate, 1,2- or 1,3-propylene carbonate, diphenyl carbonate, ditolyl carbonate, dinaphthyl carbonate, ethyl phenyl carbonate,

PF0000055033/Kes

- 17 -

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dibenzyl carbonate, dimethyl carbonate, diethyl carbonate, dipropyl carbonate, dibutyl carbonate, diisobutyl carbonate, dipentyl carbonate, dihexyl carbonate, diheptyl carbonate, dioctyl carbonate, didecyl carbonate, and didodecyl carbonate.

- 5 5. A process according to any one of claims 1 to 4, wherein an amine or an amine mixture having an average amine functionality of from 2.1 to 10 is reacted.
6. A process according to any one of claims 1 to 5, wherein the reaction of the carbonate or carbonates with the amine or amines takes place in a solvent.
- 10 7. A process according to claim 6, wherein the solvent is selected from the group consisting of decane, dodecane, benzene, toluene, chlorobenzene, dichlorobenzene, xylene, dimethylformamide, dimethylacetamide, and solvent naphtha.
- 15 8. A process according to any one of claims 1 to 5, wherein the reaction takes place in the absence of an inert solvent.
9. High-functionality highly branched polyureas preparable by the process according to any one of claims 1 to 8.
- 20 10. Use of the high-functionality highly branched polyureas according to claim 9 as adhesion promoters and thixotropic agents and as components for preparing paints and varnishes, coatings, adhesives, sealants, castable elastomers, and foams.